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White Mountain Willows.—III.*

By M. S. Bebb.

SALIX ARGYROCARPA, Anders.

When we think of all the botanists of the preceding generation who, at one time or another, were called upon to make some disposition of this beautiful willow, requiring a more or less critical study of its character,—Hooker, Pursh, Nuttall, Carey, Tuckerman, Barratt, and others—the wonder grows that some one of them did not recognize in it a distinct species. The habit of the plant, if nothing more, ought to have given a hint that the reference to *S. repens*, which they all seemed bent upon making, was a mistake. In the herbarium of the Philadelphia Academy of Sciences there is a specimen labelled " *S. Labradorica*, Schw., White Hills, N. H.—H. Little," but I cannot learn that the name was ever published. It shows, however, that at a very early day, the plant was known to occur in Labrador, a locality discredited by Andersson, but which is abundantly confirmed by recent collections.

The full and accurate description given by Andersson leaves little to be said in addition, and less by way of criticism. But as to the way the plant grows in its native habitat, the books have little to tell us. Mr. Carey groups it with *S. pedicellaris*, *S. Uva Ursi*, etc., as a "small shrub," which being evidently the sum total of information available to Andersson, is rendered "*Fruticulus non altus*." I mention this only that the average reader may appreciate the originality of Mr. Faxon's observations. He remarks " *S. argyrocarpa* seems to me to be much more restricted in its range in the White Mountains than *S. phylicifolia*. In

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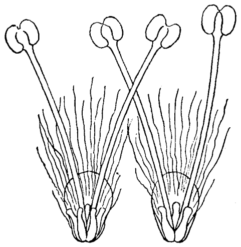
*Note.—Concerning the general character of the White Mountain *S. phylicifolia*, my remarks were unguarded and do not fairly state the amount of actual divergence from the Old World type. While I do not wish to qualify in the least what was said of the closeness of resemblance observed between some of Mr. Faxon's specimens and certain others of genuine *phylicifolia* from Lapland, it is nevertheless true that from the common meeting ground thus indicated, the European forms vary mainly in the direction of *S. nigricans*, *S. caprea*, etc., whereas in this country the variation is in the direction of *S. chlorophylla*, and hence in so far as any difference appears in a series of specimens, it is a difference marked by shorter pedicels, longer styles, and more slender aments. I intended my closing words to cover this, but was not sufficiently explicit.

fact I only remember it as growing in the upper part of Tuckerman's Ravine in a quite limited area, a little in the Alpine Garden and a pretty large area about the Lake of the Clouds—all on or near Mount Washington. It is upright or bushy-branched throughout, growing in wide, dense patches, one and one-half to two and one-half feet high, frequently depressed at base. It is much smaller and less irregular in form than the S. *phylicifolia* with which it is usually associated."

The staminate plant seems to be rare and the few specimens which I have seen (with only a single exception) show aments that have been drenched by rains or injured by frosts. This scarcity of the male plant and its flowering at an unfavorable season, may account for the fact that perfectly fertilized pistillate aments are likewise rarely seen. Andersson says, "*capsulis vix ½ lin. longis*," showing that he was unacquainted with the fully developed capsule, which is 2-2½ lines long. The non-fertilized plant, with minute, silky-white capsules, is the form commonly seen in herbaria, and in fact so familiar do persons become with this and so accustomed to regard it as the ordinary state of the species, that I once had a specimen of fully developed aments sent me accompanied by a note calling my attention to the "abnormal fruit!" The figure (×8) represents the peculiar doubling of the gland in the male flower, first noticed by Mr. Carey.



SALIX UVA URSI, Pursh. (*S. Cutleri*, Tuck.)

This little willow is found on all the alpine summits of New England and New York, on Mt. Albert, Lower Canada, near the summit (*J. H. Allen*) and at the sea-level on the coast of Labrador. Mr. Faxon says of it," extremely abundant over all the high summits of the White Mountains, from 4,000 ft. altitude upward. It is strictly prostrate and creeping, all the branches keeping near the surface of the earth and rocks, except in very sheltered situations, where the terminal shoots may bend upward to a height of 4 inches. It frequently creeps up and over stones, to which it seems to cling for warmth. From a stout central root it spreads in all directions (the branches for a short distance sending down rootlets into the ground) covering an irregular area of 1 to 2 feet in diameter. Sometimes it is inclined to grow mostly in one direction, when it may measure nearly two feet from root to tip: but always matted and flat."

This perfectly well characterized species was first named and described by Pursh; subsequently, for reasons to be discussed hereafter, Tuckerman rejected the original name, substituting for it his own *S. Cutleri;* Carey retained the old name, but Andersson adopted that of Tuckerman, and Dr. Gray, unfortunately, without due consideration followed him. On the page of the "Prodromus" where *S. Cutleri* appears there is a foot-note as follows: "It seems that the older name *Uva Ursi* ought to be preserved, A.DC." You may search in vain through the contributions to the same volume by such botanists as Regel, Parlatore, J. Muller and others, for any similar editorial criticism. In fact the very exceptional character of this protest by Alphonso De Candolle must be taken into account as a measure of the conviction which prompted it. After the appearance of the fifth edition of the Manual, I wrote to Dr. Gray expressing my regret at seeing *Uva Ursi* displaced and calling his attention to the trivial and invalid character of all the objections which had ever been raised against its retention. Doubtless the whole matter was a bore to him, but with that indulgence and helpfulness so characteristic of the man, he now took pains to acquaint himself with all that had been written on the subject and then replied: "I think the *facts are clear* that you must restore *Uva Ursi.* Andersson was *too loose* in respect to priority of names, and is not to be followed *blindly.*"

The reasons given by Andersson for rejecting the name *Uva Ursi* are as follows: 1, because the description given by Pursh is "very uncertain" and drawn from "cultivated specimens;" 2, "because if we respect this defective description there are many other very different species, from the White Mountains of New Hampshire and Labrador, that by the same rule must be granted also." Practically the whole question turns upon whether Pursh's description is, in reality, very uncertain and defective. My first impulse would be to arrange in parallel columns the original description and that given by Andersson, leaving the reader to make comparisons and judge for himself, but standing in wholesome dread of editorial curtailment, let it suffice to say, that when thus arranged two defects appear in the first—the leaves are said to be "obtuse" and the aments "lax." Admitting these inaccuracies, it may still be confidently claimed that Pursh limits, in no uncertain manner, a valid species. Indeed, for the day in which it was written, and considering the brevity which the author seeks to maintain throughout his work, the description is remarkable, not for its "uncertainties and defects," but on the contrary for the exact truthfulness with which minute characters are given, the importance of which was scarcely so fully recognized then as now. Two things may be said in extenuation of the defects mentioned above: first, that specimens are often found in which the leaves are all obtuse, or the aments loosely flowered; second, that such inaccuracies are very apt to occur in descriptions of new species, drawn from meagre and often incomplete specimens. Andersson himself described a *Salix Wrightii* of our southwestern States, as having "*amentis brevibus, densifloris, curvatis*," but it now turns out that every one of these supposed characters represent nothing more than the individual peculiarities of the one tree from which Mr. Wright took his specimens. In its normal development *S. Wrightii* has rather long, loosely flowered aments, not at all curled up as they happen to be in No. 1877 coll. Wright. The remaining objections are without significance but since they have been raised ought not to be passed without comment. *S. Uva Ursi* was "described from cultivated specimens." But an objection of this sort does not stand in the way of Andersson's accepting *S. petiolaris*, Smith, which was not only described from cultivated specimens, but all that was known at the time of its origin was that it had been "sent to Mr. Crowe by Mr. Dickson as of British growth." It had gotten into Mr. Dickson's *Salicetum* nobody knew whence. Nay more, having united *S. petiolaris* "described from cultivated specimens," and *S. sericea*, Marshall, Andersson retained the former name for his aggregate species, although *S. sericea,* described from the indigenous plant, antidated the publication of *S. petiolaris* by seventeen years! The second objection is *mere talk.* *Salix Uva Ursi* is either a good species, capable of verification, or it is not. It does not affect the question in the least that something else may or may not share the same fate. " Every jug must stand on its own bottom." But in point of fact what other species is there of the White Mountains or Labrador which we must accept on the same grounds that we do *Uva Ursi?* Not one. True, by a process of elimination, the expert salicologist is led to believe that *S. planifolia*, Pursh, had it been as well described as *S. Uva Ursi*, would have anticipated *S. chlorophylla*, And.; but no one in the last fifty years has thought of identifying a species very obscurely described from leaves only.

Turning now to the objections urged by Professor Tuckerman, we find his argument to run like this: Hooker admits *S. Uva Ursi* doubtfully in his flora, while he enumerates *S. retusa* as belonging to our northern regions;"* Pursh gives no character which will distinguish his *S. Uva Ursi* from *S. retusa*, therefore *S. Uva Ursi* is *S. retusa*. Now, to begin with (and it will do to end with, for that matter) *S. retusa* has never been found in America; the plant so named by Hooker being an Arctic species of very different character, belonging in fact to a group having no representative in Europe. That while Andersson was willing to accept Tuckerman's name, he placed no value upon the argument by which its imposition was in the first place maintained, is shown by the fact that he flatly and without equivocation cites *S. Uva Ursi*, Pursh, under *S. Cutleri*, and not under the species to which is referred *S. retusa*, Hook! If the reader will think out for himself all that this implies, I need not say another word.

It was a happy thought of Prof. Tuckerman's to name this willow for Manassah Cutler, and if sentiment might be allowed to shake a " wavering balance " I would gladly see it adjusted in favor of *S. Cutleri*; but the balance does not waver, it sinks heavily with the weight of facts and authorities on the side of *S. Uva Ursi*.

Aphyllon fasciculatum in Montana.

Mr. E. R. Drew's " Notes on the Botany of Humboldt County, California," which formed so interesting a feature of the June number of the BULLETIN, contained a few remarks on the ten-

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*Silliman's Journ. XLV.—p. 36.